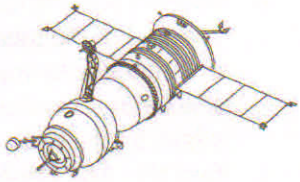
REMOTE SENSING

1. **DESCRIPTION:** Teams will use remote sensing imagery, science and math process skills to complete tasks related to an understanding of the causes and consequences of **human impact** on the **environment**.
   A TEAM OF UP TO: 2 **APPROXIMATE TIME:** 50 minutes
2. **EVENT PARAMETERS:** Each team may bring five 8.5" x 11" two-sided sheets of paper containing any information from any source. Each participant may bring a **metric ruler,** a **protractor,** a **triangle,** and any kind of (non-graphing) calculator, but no other resources.
3. **THE COMPETITION:** The event will be organized as follows:



   a. The causes, consequences, & evidence for human **impact on the environment**.
   b. Students will analyze and interpret remote sensing images.
   c. Students will use math computations to analyze or express quantitative data
   d. Students should understand concepts and terms related to the sustainability of the terrestrial, oceanic, and atmospheric environments on earth and the interactions which support life and civilization as we know it: development and resource extraction, radiative balance of the atmosphere, natural and man-made sources of greenhouse gasses, changes in land, atmospheric and oceanic temperatures, carbon cycles, hydrologic cycles, and plant growth.
   e. Students should be familiar with the principles of satellite imagery, including orbital missions and sensor systems related to climate change, land use monitoring, oceanic and atmospheric monitoring, the electromagnetic (EM) spectrum and interactions between EM energy and the atmosphere (particularly radiometric measurements of temperatures; greenhouse gasses; land, sea and ice elevations; land, sea and vegetative color; passive and active sensors; and principles of digital image processing).
   f. Students may be asked to interpret digital data presented numerically in a grid.
4. **SAMPLE ACTIVITIES**:
   a. Compare the area of insect infestation in a given location with recorded amounts in previous years.
   b. Evaluate area damaged by deforestation or forest fires.
5. **SCORING**: Teams with the highest score will be the winners. Selected task will be used as a tiebreaker.

Recommended Resources: All reference and training resources including the **Remote Sensing CD** are available on the Official Science Olympiad Store or Website at http://www.soinc.org